AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

After the title of the invention and before the heading "Field of the Invention" on page 1 of the specification, please replace the paragraph entered by the Preliminary Amendment dated February 5, 2004 with the following:

This application is a continuation of U.S. patent application Serial No. 09/652,218, filed August 30, 2000, now U.S. Pat. No. 6,708,131 issued March 16, 2004.

On page 6, please replace the three paragraphs beginning on line 6 and ending on line 10 as follows:

Figure 1 is a plan view of a wafer with a first stepped area exposed according to a conventional process.

Figure 2 is a plan view of the wafer of FIG. 1 with a second stepped area exposed according to a conventional process.

Figure 3 is a plan view of the wafer of FIGS. 1 and 2 with a first scanned area exposed according to a conventional process.

On page 6, replace the paragraph beginning on line 11 as follows:

Figures 4A and 4B ~~Figure 4 is~~ illustrate a partial schematic drawing of a stepper and a scanner.

Replace the two paragraphs on page 6, lines 22-24, as follows:

Figure 10 is a plan view of a wafer with a first stepped area exposed according to a conventional process.

Figure 11 is a plan view of a wafer with a second stepped area exposed according to a conventional process.

Replace the two paragraphs on page 7, lines 1-4, as follows:

Figure 12 is a plan view of a wafer with a single scanned area exposed according to a conventional process.

Figure 13 is a plan view of a wafer rotated to accommodate a single scanning process according to a conventional process.

Replace the paragraph beginning on page 7, line 5, as follows:

Figures 14A and 14B illustrate ~~Figure 14 is~~ a partial schematic drawing of a stepper and scanner wherein a production wafer is rotated when transferred from the stepper to the scanner.

On page 7, replace the paragraph beginning on line 12 as follows:

As shown in ~~FIG. 4~~ FIGS. 4A and 4B, a calibration wafer 10 is placed in a wafer stage 112 of a first, or reference machine, in this case, the stepper 100. The wafer stage 112 of the stepper 100 is supported by a carriage (not shown). The carriage is capable of moving the wafer stage in the x and y directions, as indicated by the arrows 12. The wafer stage 112 has an x-location mirror 114 attached to a side 115 parallel to the y-axis and a y-location mirror 116 attached to a side 117 parallel to the x-axis. An x-location interferometer 118 focused on the x-location mirror 114 is attached to the frame (not shown) of the stepper 100, and a y-location interferometer 120 also attached to the frame, is focused on the y-location mirror 116. The movement and location of the wafer stage is very precisely controlled.

Replace the paragraph on page 8, beginning on line 13, as follows:

The actual positions of the points along the nominally cruciform pattern 14a formed on the calibration wafer 10 are precisely determined using the stepper metrology. The x and y coordinates of these points constitute an array, x_A, $y_A = \{x_{A1}, y_{A1}, x_{A2}, y_{A2}, x_{A3}, y_{A3} \ldots x_{An}, y_{An}\}$. Returning to ~~FIG. 4~~ FIGS. 4A and 4B, this array of points is transmitted by the processor 122 of the stepper 100 to its memory 123.

Replace the paragraph beginning on page 10, line 15, as follows:

During the manufacture of an integrated circuit according to the stepping and scanning pattern of FIGS. 1-3, the calibration array is used to determine and control the position of a production wafer 22 in the integrated circuit manufacturing center of

~~FIG. 4,~~ FIGS. 4A and 4B as follows: The production wafer 22 is placed in the wafer stage 112 of the stepper 100. The wafer stage 112, light source, lens, and mask are aligned to produce region 1 and region 1 is exposed. During alignment, location data for the wafer stage 112 is obtained using the alignment mirrors 114, 116 and interferometers 118, 120 of the stepper. The wafer stage location is processed by the processor 122 of the stepper 100, and is stored in memory 123. After exposure of region 1, the wafer stage 112 moves to region 2 and the mask is aligned and region 2 is exposed.

Replace the paragraph beginning on page 11, line 19, as follows:

This manufacturing process may be illustrated using the flow chart set forth in FIG. 9. A production wafer 22 is placed in the wafer stage 112 of stepper 100 at step 400. Next, the location of the wafer stage is determined using the interferometers 118, 120 and mirrors 114, 116 of the stepper 100 at step 402. This location data of the wafer stage 112 of the stepper constitutes stepper array x_{PA}, y_{PA}. The stepper location array x_{PA}, y_{PA} is processed by the processor 122 at step 404 and transmitted to the stepper memory 123 at step 406. At step 408, the photolithographic manufacturing process of the stepper 100 is completed. At step 410, the production wafer 22 is transferred from the wafer stage 112 of the stepper 100 and placed in the wafer stage 212 of the scanner 200. During this transfer step, the production wafer 22 maintains the same orientation in the x-y plane. In FIGS. 4A and 4B ~~FIG. 4~~ this orientation is with the notch 23 facing up. The stepper location array x_{PA}, y_{PA} is also transmitted to the scanner memory 223 by means known in the art at step 411.

Replace the paragraph beginning on page 12 at line 19, as follows:

Under the improved alignment method for accommodating rotated wafers during the manufacture of an integrated circuit, an existing calibration array obtained using a calibration wafer 10 that is not rotated, is modified and used to determine and control the position of a production wafer 23 that is rotated when transferred from a stepper to a scanner. As shown in ~~FIG. 14~~ FIGS. 14A and 14B, the production wafer 23 is placed in the wafer stage 512 of the stepper 500 with its notch 24 facing in a first direction (x). The wafer stage 512, light source, lens, and mask (not shown) are aligned to produce sub-area 1 and sub area 1 is exposed as shown in FIG. 10. During alignment, location data x_{NA}, y_{NA} for the wafer stage 512 is obtained using the alignment mirrors 514, 516 and interferometers 518, 520 of the stepper 500. This location is processed by the processor 522 of the stepper 500 at step 504 and transmitted to the stepper memory 523. After exposure of sub-area 1, the wafer stage 512 moves to sub-area 2 and the mask is aligned and sub-area 2, FIG. 11, is exposed.

Replace the paragraph beginning on page 14 at line 15 as follows:

Referring now to FIG. 15, a production wafer 23 is placed in the wafer stage 512 of stepper 500 at step 800. Next, the location of the wafer stage is determined using the interferometers 518, 520 and mirrors 514, 516 of the stepper 500 at step 802. This location data of the wafer stage 512 of the stepper 500 constitutes an array x_{NA}, y_{NA}. The stepper location array data x_{NA}, y_{NA} is processed by the processor 522 of the stepper 500 at step 804 and is stored in memory 523 at step 806. At step 808, the photolithographic manufacturing process of the stepper 500 is completed. At step 810a, the production wafer 23 is removed from the wafer stage 512 of the stepper 500, rotated 90° at step

810b and placed in the wafer stage 612 of the scanner 600 at step 810c. In ~~FIG. 14~~ FIGS. 14A and 14B,, the orientation of the production wafer 23 changes from the notch facing in the first direction (x) in the stepper 500 to facing in the second direction (y) in the scanner 600. The stepper location array x_{NA}, y_{NA} is also transmitted to the scanner memory 623 by means known in the art at step 811.

On page 16, line 4, delete the paragraph as follows:

~~What is claimed as new and desired to be protected by Letters Patent of the United States is:~~

On page 17, before claim 1, add a new paragraph as follows:

What is claimed as new and desired to be protected by Letters Patent of the United States is: